

# Analysis Adoption of Innovation Go-jek Application

Adrian Soemantadiredja<sup>1</sup>, Aida Vitayala, Irman Hermadi<sup>3</sup>

<sup>1,2,3</sup>Management and Business, School of Business, Bogor Agricultural University,  
Jl. Raya Pajajaran, Bogor, Indonesia

**Abstract:** *Gojek Application is a form of innovation in terms of the provision of public transport services. The development and innovation of a technology will be underutilized and abandoned by the user if the acceptance of these technologies is limited and does not have enough speed to be adopted, so that the rate of adoption among prospective users of those applications will be very low. In other words, the desire and the speed of the user to want to adopt an innovation technology will affect the extent to which such a technology would last. The purpose of this research is to analyze the adoption against information Go-jek applications system influenced by the characteristics of the innovation and the success of information systems. The results showed that the application of the system of adoption among users in this case is the drivers included in the category. Investigation research results influence the characteristics of innovation against the adoption of innovations on the application of the Go-jek drivers significantly positive effect it is evidenced by the path coefficients obtained i.e. of value  $t$  0601 statistics obtained namely of 6.108. The results of the analysis of the success of information systems Go-jek applications obtained the results that the variable quality of the system and the quality of the information is proven to provide significant influence against other variables in the model of research. But it brings results that there is no influence on the perception of the quality of the variables of the system against user satisfaction as evidenced by the value of path-coefficient 0.053 with  $t$  value statistics 0.459. The results of the success information systems against the adoption of innovations on the application of the Go-jek drivers is positive effect significantly to innovation adoption Go-jek application system. This is evidenced by the value of the coefficient 0.401 with  $t$ -value statistics 4.671. Through the research results it can be concluded that the adoption of Go-jek applications system was influenced by two aspects: the characteristics of the innovation and the success of information system*

**Keywords:** Adoption of Innovation, Go-jek Applications, Information Systems and Technology, Online Transportation

## 1. Introduction

The role of technology today has grown more rapidly and become part of human life. In business activities, current technology is also widely used and developed by a company. Information technology itself can be interpreted as the computing technology that combines computer network with communication channels that carry data, voice, or video [1]. One of the developments of the technology continues to experience rapid development is a mobile phone or a cell phone, because it was felt has given an advantage to users.

Innovation is one form of change management selected by the organization as a response to the dynamics of business environment. Potential adopters will evaluate innovations based on the characteristics of the innovation that is a relative advantage, compatibility, complexity, triability, and observability [2]. One form of innovation that is faced by users of mobile phones these days is a mobile-based online transportation system.

PT Gojek Indonesia is a company engaged in the provision of transport services online-based mobile application has launch Go-jek. Go-jek application is an innovation in terms of the provision of public transport services. This application becomes a hope for a motorcycle taxi driver as an extension of the tool where the motorcycle taxi drivers can reach a larger number of consumers. Inefficiency of conventional motorcycle taxi services have become an opportunity for Go-jek to innovate to create an application-based system that aims to increase the value of their service.

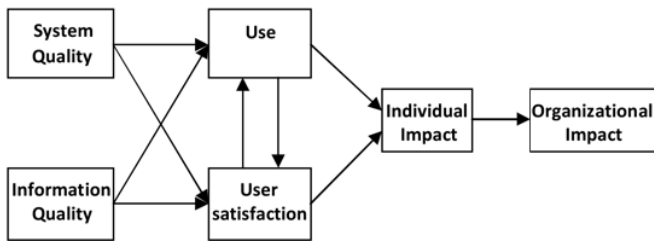
An innovation need to consider acceptance of users, in this case is a motorcycle taxi driver who was subjected to application users. Development and innovation on a technology will be underutilized and abandoned by the user when the acceptance of these technologies is limited and does not have enough speed to be adopted, so that the rate of adoption among prospective users of the application will be very low. In other words, the desire and the speed of the user to want to adopt a technological innovation will affect the extent to which the technology would last.

## 2. Literature Review

Information systems and information technology is a matter that can not be separated. Utilization of information technology in business can be a strategic advantage and become a competitive tool for companies. Strategies that can be done with the application of information technology is a low cost, differentiation, innovation, promote growth, and develop alliances [3]. Technology is the main reason driving the organization to make changes quickly and dramatically. The impact due to changes in technology will be addressed by members of the organization in a positive and negative.

Innovation is an idea, behavior, products, information, and new practices are not yet well known, accepted and used or applied and implemented by someone in particular locality, which can be used or the occurrence of a change in the aspect of public life in order to make the improvements of quality life of every individual and all citizens concerned [4]. Innovation also means a new way of working something. An idea, new ways, or object that is operated by person as

something new is an innovation.



DeLone information systems success model and McLean (1992) is regarded as a model of parsimony that has many researchers who developed the model both in the original model and have been modified [5]. Many studies that support the success model of information system DeLone and McLean (1992) makes McGill et al conducted research to test the consistency of the model.



McGill, Hobbs, and Klobas (2003) have tried to make small modifications to the success model of information system that was created earlier McGill et al (2003) makes two changes to the model DeLone and McLean. First, construct (variable) quality system split into two ; the variable quality of the system and the perception of the quality system. The results of the research McGill et al (2003) showed that the hypothesis is rejected is the perceived quality system to use, perceived quality information to use, use of the individual perceived impact, impact on the individual perceived organizational impact. In addition it also obtained the result that the variable use (use) is not a proper gauge. The use of old does not mean satisfied, but because of ineffective system [6].

### 3. Methods

#### 3.1 Types and Sources of Data

The data collected are primary data and secondary data. Primary data were collected through direct observation in the field with the respondents who had been selected by the researchers. Respondents who interviewed are parties who act directly as Go-jek driver system users to analyze the adoption of innovation and analyze the success of information systems who also affects a person to the process of innovation adoption in Go-jek application system. The selection of respondents was based on the assessment that the respondents who selected the parties that have relevance to the use of Go-jack driver applications. Secondary data were collected from literature, from various sources of information can be used for various concepts and theories that are relevant to the problems examined, and also the records that related to support the completeness of the information needed.

#### 3.2 Data Analysis

This study has two types of data to be processed and analyzed, i.e. quantitative data and qualitative data. Quantitative data was processed using a statistical model to see the results of the research that has been done. The model was analyzed with SEM structural equation modeling based components or variant (component based) are popular with Partial Least Square (PLS). PLS recognizes two kinds of components in a causal model that is: the measurement model (measurement model) and the structural model (structural model). The purpose is to predict the influence of variable PLS X against Y and explain the theoretical relationship between both variables.

The model consists of the relationship between the items observable variables and latent constructs measured with these items. First, assess the outer model or measurement model. The model is an assessment of the reliability and validity of research or variable is defined as the relationship between indicators of the latent variable. There are three criteria to assess measurement models are: convergent validity, discriminant validity and reliability of composite. PLS analysis conducted on a 2 stages. First, the outer assess measurement models or models that are divided into three criteria to assess measurement models are: convergent validity, discriminant validity and reliability of composite.

Convergent validity of the measurement model with a reflexive indicators assessed based on the correlation between the item score / component score to construct score is calculated by PLS. The size of individual reflexive said to be high if more than 0.50 correlated with the construct to be measured. Discriminant validity of the measurement model with a reflexive indicators assessed by cross loading measurements with the construct. Another method for measuring the discriminant validity is to compare the value of the square root of the average variance extracted (AVE) of each construct with the correlation between the constructs with other constructs in the model.

$$AVE = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum_i var(\varepsilon_i)}$$

which  $\lambda_i$  is component loading to indicator and  $var(\varepsilon_i) = 1 - \lambda_i^2$ . If all of the indicators in standardized, then this measure is equal to average communalities within the block.

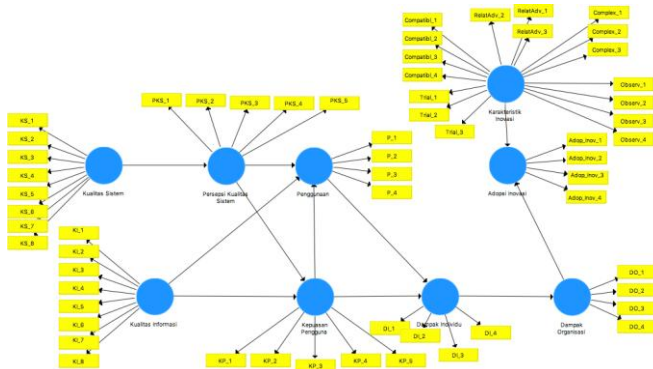
Composite reliability block indicator that measures a construct can be evaluated by two kinds of sizes internal consistency and Cronbach's alpha. By using the output produced by the PLS, the composite reliability can be calculated with the following formula:

$$\rho_c = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum_i var(\varepsilon_i)}$$

which  $\lambda_i$  is component loading to indicator and  $var(\varepsilon_i) = 1 - \lambda_i^2$ .  $\rho_c$  as a measure of internal consistency can only be used to construct indicators of reflexive.

Second, assess inner structural model or models. Testing inner structural model or models made to look at the relationship between constructs or latent variables, as seen from the R-square value of the research model and also by looking at the big structural path coefficients. The stability of these estimates was evaluated using t-test statistics obtained through bootstrapping procedure.

#### 4. Result



**Figure 1:** Model Penelitian

The image above shows a model study to analyze the innovation adoption of an application system that is influenced by two factors: the success of information systems and innovation characteristics. The model tried to see which factors influence the adoption of an innovation.

#### 4.1 Evaluation Model of Measurement

**Table 1:** AVE Results

	AVE	Akar AVE
Adoption of Innovation	0.587	0.766
Characteristics Of Innovation	0.685	0.828
Compatibility	0.816	0.903
Complexity	0.668	0.817
Observability	0.779	0.883
Relative Advantage	0.688	0.829
Trialability	0.789	0.888
Information Quality	0.664	0.815
System Quality	0.722	0.850
Perceived System Quality	0.551	0.742
User Satisfaction	0.776	0.881
Use	0.721	0.849
Individual Impact	0.650	0.806
Organizational Impact	0.756	0.870

Based on the results if the data showed that the code KS7 research indicators (indicators), KS8 (indicator) and KI5 (indicator) have low validity. The value of the charge (loading) obtained under 0.50. Therefore, these indicators are considered ineligible and in the elimination of the model, then re-estimation performed to provide assurance that all the indicators had loading values above 0.50. The results of the estimation data if the resulting value of the content (loading) of more than 0.50 which indicates that all the indicators are

qualified convergent validity. From result of the estimation of cross loading showed that the correlation construct the indicator is larger than the correlation with other constructs. It can be concluded that all indicators predict latent constructs on their blocks better than indicators in other blocks.

The value obtained is the smallest AVE 0.551 (perception of the quality system). Moreover, it can be seen also in Table 8 that the root AVE value obtained is greater than the value of the AVE it indicates that the value has been obtained as required.

The next test is to look at the reliability construct latent variables are measured by two criteria: composite reliability and croanbach alpha of block indicator that measures the construct. Constructs is reliable if the value alpha compositing reliability and croanbach obtained had a value greater than 0.70. Yield data composite reliability and croanbach value for all constructs have a value greater than 0.70 so it can be stated that all constructs have good reliability and qualified.

#### 4.2 . Evaluation Model of Structural

**Table 2:** Hasil Nilai AVE

Hipotesis	Jalur Koefisien	T Statistik
Karakteristik Inovasi -> Adopsi Inovasi	0.581	5.660
Kualitas Sistem -> Persepsi Kualitas Sistem	0.901	53.683
Kualitas Informasi -> Kepuasan Pengguna	0.976	8.822
Persepsi Kualitas Sistem -> Kepuasan Pengguna	-0.059	0.493
Kualitas Informasi -> Penggunaan	0.442	3.058
Persepsi Kualitas Sistem -> Penggunaan	0.361	2.937
Kepuasan Pengguna -> Penggunaan	0.178	1.535
Penggunaan -> Dampak Individu	0.340	2.293
Kepuasan Pengguna -> Dampak Individu	0.604	4.151
Dampak Individu -> Dampak Organisasi	0.885	30.112
Dampak Organisasi -> Adopsi Inovasi	0.402	4.459

The value of t table in advance is calculated with the alpha value of 5% ie 1.96 so that the t value should have a figure > 1.96. In table 9 it can be seen that the overall value of the t statistic obtained greater than 1.96 which indicates that the connectivity construct independent variables have a significant effect on the dependent variable. But there is one track that does not have a significant influence and which variables influence the perception of the quality of the system where the user satisfaction path coefficient values obtained - 0.059 and the t statistic of 0.493 (t statistic < 1.96) indicating that the variable does not have significant effect on the dependent variable.

#### 4.3 Pengujian Hipotesis

Characteristics of innovation positively affects the adoption of innovation in the Go-jek application system. In general, respondents gave a positive assessment of the characteristics of innovation so that the adoption of the driver to the application Go-jek is high. However, based on interviews obtained information that there are respondents who give a negative assessment of the characteristics of the

innovation system Go-jek applications. Dimension characteristics of innovation that often get negative assessment is a factor of complexity, compatibility, and relative advantage.

Quality system positively affect the perception of the quality of the Go-jek application system. Quality Go-jek system currently in general according to respondents already qualified and well. Respondents feel the quality of the Go-jek system that is accurate and reliable in presenting information and data customer orders. The data presented by the respondents is quite actual and factual. By the assessment would affect a person's perception of the quality of the Go-jek application system. But there are also few respondents considered that the quality of the existing system is not good enough. Based on the interview obtained findings that respondents often get orders that do not comply. The condition is often detrimental to the drivers because the drivers were forced to cancel orders that cause cuts and loss of bonus points balance.

The quality of information to positively affect user satisfaction Go-jek system application based on the interview respondents were generally satisfied with the quality of Go-jek applications system that is respond to the actual and factual information. But there are also respondents said that the quality of the information displayed is still not perfect and needs to be repaired.

The perception of quality system is positively affected our satisfaction user Go-jek applications system. The results showed that there was no influence on the variable quality of information on user satisfaction. If the user application system Go-jek has had its perception of the quality systems as well as confident with the quality of the system it uses, and the sense that system is not difficult, but they will not directly believe that use of system would provide greater benefits and will improve their performance. Perceptions of the Go-jek system applications are either not directly affect their satisfaction will be the system. More emphasis on the satisfaction of benefits received and perceived by the driver thanks to the quality of the Go-jek application system, so the perception of the quality of a system is not enough to affect user satisfaction as the driver.

The quality of information positively affects the use of Go-jek application systems. In general, respondents are satisfied with the quality of information produced by the Go-jek app that can provide actual and factual information as well as complete. The respondents feel the completeness of the information received made him want to use the application. But there are also respondents said that the quality of the information displayed is still not perfect and needs to be repaired for example consumer information regarding the address that sometimes does not correspond to the map. In addition there is also the narrative of respondents said that in the application system output reports was less attractive to users because the output is too full report actually confuse users of the system as it is considered complicated information.

Perceived quality of the system positively affects the use of

Go-jek application systems. Respondents generally have a good perception of the Go-jek applications system due phenomenal news in many media so that they believe that Go-jek is a good and reliable system. The intended use of the system is because of the perception that they will believe and are confident that by using these applications can assist them in completing their tasks and will improve their performance.

User satisfaction positively affect the use of Go-jek application systems generally respondents were satisfied with the current system that has been running on Go-jek application. Existing systems are considered able to provide benefits in accordance with what is needed. In addition, respondents also feel satisfied with the features that currently exists. But there is also some respondents that they do not feel satisfied because the features are still lacking. One of them is featured chat application with consumer where toll fees can hit the driver.

Use of the Go-jek application system positively affected individual impact. In general, respondents felt the impact of the use of Go-jek application systems is to facilitate the work and the drivers were able to get more consumers. But there are also respondents who said that the impact has not been felt completely due to wages earned far less than before using the Go-jek app.

User satisfaction is positively affects the impact of the individual. In general, respondents were satisfied with the current system has been running on Go-jek application. Existing systems are considered able to provide benefits in accordance with what is needed. In addition, respondents also feel satisfied with the features that currently exists. In this acceptable impact is of respondents felt his work as drivers become more practical thanks to the existence of Go-jek applications systems.

Individual impacts positively influence organizational impact. In general, respondents felt the benefits of the Go-jek application system, so they become loyal and strive to raise the name as well as being a good partner for the Go-jek company. But there are also respondents who said that they had less individual impact. They complained about the system of bonuses earned are lower compared with similar companies that it has so far been demonstrated that the company is superior to Go-jek, so they also chose to join others companies like Grab and Uber.

In this hypothesis was measured through the variable impact of the organization which is the final output of the model of success information systems. The success of Go-jek system information into a basis for a decision on the adoption of Go-jek application innovations. Based on the results obtained interview respondents regarding the quality assessment system, and also impacts the quality of information received that is also the basis for their decision to adopt the innovation in Go-jek applications.

## 5. Conclusion and Suggestion

### 5.1 Conclusions

Based on research, it can be concluded that the adoption of innovations Go-jek application system was influenced by two factors: the characteristics of the innovation and the success of information systems. In addition, it also obtained the results that the Go-jek application system included into the category of high success. The success of information systems Go-jek applications in these research was analyzed by using the D&M model IS Success (1992) which have been modified by the McGill et al (2003). So it can be concluded that the merger of the characteristics of the innovation and the success of information system in measuring the level of adoption of innovations of someone is a framework that can be used to provide an evaluation of the implementation of Go-jek application system.

### 5.2 Suggestion

Suggestions for the next research is expected to take a larger sample amount which not only focuses on small areas. In addition the suggestion on behalf of the company as application developers also need to do studies on the innovation characteristics of the factors currently exist with fixing things that are still unresolved, so that innovations that companies do can be implemented and adopted by users in accordance with the objectives of the company and can be sustainable. Based on the results of research, characteristics of innovation needs to be frequently gets complaints is complexity, compatibility, and relative advantage. The company also needs to make improvements to the quality of the system and the quality of the information on the Go-jek application system.

## References

- [1] Williams dan Sawyer. 2003. *Using Information Technology: A Practical Introduction to Computers and Communications*. London (UK): Career Education.
- [2] Rogers, E. M. 1983. *Diffusion of Innovations*. New York (US): A Devision of Macmillan Publishing Co. Inc.
- [3] O'Brien, James A, Marakas, George M .2011. *Management Information System*. McGraw-Hill Inc, New York.
- [4] Winardi. 2008. *Manajemen Perubahan (Management of Change)*. Edisi pertama cetakan ke-3. Jakarta (ID): Kencana Pprenada Media Group.
- [5] Mardikanto, T. 1993. *Penyuluhan Pembangunan Pertanian*. Surakarta (ID): Sebelas Maret University Press
- [6] DeLone, W.H, McLean, E.R. 1992, *Information Systems Success The Quest for the Dependent Variable*. *Information Systems Research*. No.3.
- [7] McGill T, Hobbs V dan Klobas, J. 2003. Users Developed Application and Information System Success: A Test of Delone and McLean's Model. *Information Resource Management Journal*. Vol 16 no 1.

## Author Profile



**Adrian Soemantadiredja** received the bachelor degree in Communication & Community Development, Faculty of Human Ecology, Bogor Agricultural University in 2014. He continued his study in Management and Business, School of Business at Bogor Agricultural University from 2015.



**Aida Vitayala** received the bachelor degree and master degree in Agricultural Economics, Bogor Agricultural University. She is a Professor at Faculty of Human Ecology, Bogor Agricultural University. She is a lecturer School of Business, Bogor Agricultural University. She is a lecturer in Communication and Community Development Department (bachelor, master, and doctoral programs) Faculty of Human Ecology, and School of Business, Bogor Agricultural University.



**Irman Hermadi** received the bachelor degree in Faculty of Computer Science, Bogor Agricultural University. Master degree at King Fahd University of Petroleum & Minerals. He has been honored getting the Philosophy of Doctoral (Ph.D) degree in University of New South Wales. He is a lecturer in Computer Science Department (bachelor, master, and doctoral programs) Faculty of Computer Science, and School of Business, Bogor Agricultural University.